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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/061,008	01/30/2002	James W. Burruss	100200933-1	7911

7590 04/20/2006
HEWLETT-PACKARD COMPANY
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EXAMINER

STERRETT, JONATHAN G

ART UNIT	PAPER NUMBER
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3623

DATE MAILED: 04/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/061,008		BURRUSS ET AL.	
	Examiner		Art Unit	
	Jonathan G. Sterrett		3623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1-30-02</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Currently **Claims 1-20** are pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 USC. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1-12 and 15-20** are rejected under 35 USC. 103(a) as being unpatentable over **Morrison** in view of **Radas**. **Morrison**, Jeffrey; "New Product Forecasting: Part III Translating Penetration Estimates Into Long Run Sales", April 2000, PDMA Visions, pp.1-5, www.pdma.org/visions/apr00/forecasting.html. **Radas**, Sonja; Shugan, Steven M.; "Seasonal Marketing and timing new product introductions", Aug 1998, JMR Journal of Marketing Research; 35, 3; ABI/INFORM Global, p.296.

Regarding **Claim 1**, Morrison teaches:

generating an initial demand forecast by imposing onto a set of product demand parameters a demand profile having a life cycle characterized by a growth phase, a maturity phase and a decline phase;

Page 2 para 2 & 3, a product demand profile is characterized by a growth maturity and decline phase. The product demand parameters (i.e. forecast

Art Unit: 3623

sales) have imposed on them through the use of coefficients determined from a regression equation, an initial demand forecast that is the outcome of the regression equation based on p and q.

Morrison teaches that his model approach is simplistic and does not take into account more sophisticated means for accounting for impacts (i.e. profiles) to product demand. Morrison teaches that taking these impacts into account would make for a more accurate model (see page 5 para 2 & 3).

While Morrison discusses the need for inputting additional profiles into the forecast, Morrison does not actually teach generating a forecast using them as per:

and generating an event-adjusted demand forecast based upon a convolution of the initial demand forecast with a set of one or more impact profiles each representing an impact of a respective set of one or more events on product demand over the product life cycle.

Radas teaches:

and generating an event-adjusted demand forecast based upon a convolution of the initial demand forecast with a set of one or more impact profiles each representing an impact of a respective set of one or more events on product demand over the product life cycle.

Art Unit: 3623

Page 296 para 1 and 2, a forecast is performed by adding the seasonality model to any model (i.e. convolution) in order to account for the effect of seasonality.

Page 305 column 2 para 5, Radas teaches the taking the effect of seasonality on product life (i.e. the product life cycle) into account.

Radas teaches that taking into account seasonality provides for more accurate forecasting models (page 296 para 3).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings Morrison, regarding using a life cycle model to forecast demand, to include the step of convoluting the demand forecast by adding in an impact profile, as taught by Radas, because it would make the demand forecast more accurate.

Regarding **Claim 2**, Morrison teaches:

wherein the set of product demand parameters includes an estimate of the mature demand for the product.

Page 2 para 3, the product sales estimates (i.e. the product demand parameters) include an estimate of the mature demand for the product.

Regarding **Claim 3**, Morrison teaches:

wherein the set of product demand parameters includes estimates of one or more parameters representing a length of the product life cycle.

Page 2 para 3, the product sales estimates (i.e. the product demand parameters) include estimates of fall off in sales that provide an estimation of the product life cycle (see also Table 1). Figure 1 illustrates the parameters indicate the length of the product life cycle in this example at 10 years.

Regarding **Claim 4**, Morrison teaches:

wherein the life cycle length parameters include length estimates for the maturity and decline phases of the product life cycle demand profile.

Page 2 para 3, the product sales estimates include length estimates for the maturity and decline phases. The product sales estimates indicate in this example that saturation occurs at year 6 (i.e. maturity and decline are indicated from year 6 to year 10).

Regarding **Claim 5**, Morrison teaches:

wherein the set of product demand parameters includes an estimate of stocked demand relative to an estimate of mature demand.

Page 2 para 3, an estimate of saturation demand occurs in year 6, an initial estimation of demand (i.e. stock in demand) occurs in year 1. See also Figure 1 on page 3.

Regarding **Claim 6**, Morrison teaches:

wherein one or more of the impact profiles correspond to events having a multiplicative impact on demand for the product.

Page 5 para 2, pent up demand is an impact profile having a multiplicative impact on demand for the product.

Regarding **Claim 7**, Morrison teaches:

wherein among the multiplicative impact profiles are a seasonality impact profile, a price drop impact profile, a promotions impact profile, a competitive product introduction impact profile, and an economic conditions impact profile.

Page 5 para 2, competition is an impact effect.

Page 5 para 3, the Logistic and Gompertz curves allow a more detailed extraction of key components of the process. The examiner interprets the extraction to include the characterization of competition as an impact profile.

Regarding **Claim 8**, Morrison teaches where profiles may be derived that account for various impacts to sales in a new product introduction, but does not teach:

wherein one or more of the impact profiles correspond to events having an additive impact on demand for the product.

Page 5 para 2, pent-up demand is an additive effect to the product.

Art Unit: 3623

Regarding **Claim 9**, Morrison teaches:

wherein among the additive impact profiles are a deals impact profile, a constrained product introduction impact profile, a left-to-sell impact profile and an impact profile corresponding to a bundling event.

Page 5 para 2, impacts to sales demand include those based upon latest market conditions and purchases (i.e. a left to sell impact profile.)

Regarding **Claim 10**, Morrison teaches:

wherein the life cycle demand profile corresponds to a demand profile derived from historical demand data.

Page 2 para 1, the historical demand data is used to derive a life cycle demand profile. This is done on a yearly basis rather than monthly.

Official Notice is taken that it is old and well known in the art to also use data that is a normalized monthly. Monthly data is known in the art to have a greater degree of resolution than yearly data and thus better accounts for seasonality. Normalization is a known technique that provides for extracting key components of the data to better provide for a basis of comparison.

It would have been obvious to one of ordinary skill in the art to modify the combined teachings of Morrison and Radas to include the step of the demand profile corresponding to normalized monthly demand data because it would

Art Unit: 3623

provide greater resolution to account for seasonality and would provide a better basis of comparison because the demand curve represents normalized data.

Regarding **Claim 11**, Morrison teaches adjusting a demand forecast based on inventory (page 4, inventory is assumed to have no affect, however this implies that it could have an effect since Morrison acknowledges the model is simplistic). Morrison also teaches that recent sales (i.e. sell through impact on demand) and that market conditions impact demand.

Morrison does not teach using a measure of channel inventory to generate an inventory-adjusted demand forecast as per:

generating an inventory- adjusted demand forecast based upon a convolution of the event-adjusted demand forecast with a measure of channel inventory and sell-through impact on product demand.

However, Official Notice is taken that it is old and well known in the art for channel inventory to have an impact on demand, since availability of a product in certain sales channels is known to help drive sales. Accounting for channel inventory in a sales forecast better accounts for the impact of inventory level on sales.

It would have been obvious to one of ordinary skill in the art to modify the combined teachings of Morrison and Radas to include the step of the adjusting demand based on channel inventory because it would provide a better, more

Art Unit: 3623

improved forecast by taking into account the known effect that channel sales has on inventory.

Regarding **Claim 12**, Morrison teaches that inventory has an effect on sales but does not teach:

computing the channel inventory impact measure based upon an estimate of aggregate channel weeks of supply.

Official Notice is taken that it is old and well known in the art of market forecasting to estimate channel inventory based on an estimate of total or aggregate weeks of supply. Weeks of supply is a known metric that accurately accounts for a ratio of demand to actual inventory to calculate the time remaining for the inventory to meet demand (i.e. the relationship of inventory to sales).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined teachings of Morrison and Radas regarding using inventory channel supply to estimate an impact on demand to computing the channel inventory using an aggregate weeks of supply measure, because it would provide an accurate way to estimate the input of inventory on demand.

Art Unit: 3623

Regarding **Claim 15**, Morrison and Radas teach adjusting a demand forecast based on a convolution of external effects to a demand forecast, however they do not teach:

generating a demand- adjusted demand forecast based upon a convolution of the inventory adjusted demand forecast with a measure of forecast error computed from a measure of actual demand and a measure of demand predicted by the inventory-adjusted demand forecast.

The examiner takes Official Notice that adjusting a forecast using error values is old and well known in the art. This technique provides for adjusting a forecast to be more accurate once actual data is available.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined teachings of Morrison and Radas regarding estimating forecast demand, to include the step of adjusting the demand using error values, because it would provide a way to make the forecast more accurate using available sales data.

Regarding **Claim 16**, Morrison and Radas do not teach:

smoothing the measure of forecast error in accordance with an exponentially-weighted moving average function.

Art Unit: 3623

Official Notice is taken that it is old and well known in the art to use an exponentially-weighted moving average function to smooth values. Smoothing is performing to more clearly show trends in the data because noise and outliers are removed.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined teachings of Morrison and Radas regarding estimating forecast demand, to include the step of adjusting the demand using error values and smoothing the error values using an exponentially-weighted moving average function, because it would provide an effective way to more clearly show trends in the data by removing noise and outliers from the error values.

Claims 17-20 recite limitations similar to those addressed by the rejection of **Claims 1-12, 15, 16** above, and are therefore rejected under the same rationale.

4. **Claims 13, 14** are rejected under 35 USC. 103(a) as being unpatentable over **Morrison** in view of **Radas** and further in view of **Smith**. Stephen A **Smith**; Dale, D Achabal; "Clearance pricing and inventory policies for retail chains", Management Science, Linthicum: Mar 1998.Vol.44, Iss. 3; pg. 285, 16 pgs.

Art Unit: 3623

Regarding **Claim 13**, Morrison teaches that inventory has an impact on demand but does not teach:

wherein computing the channel inventory impact measure comprises computing a measure comparing the aggregate channel weeks of supply estimate and an estimate of an aggregate weeks of supply target for the channel.

Smith teaches:

wherein computing the channel inventory impact measure comprises computing a measure comparing the aggregate channel weeks of supply estimate and an estimate of an aggregate weeks of supply target for the channel.

Page 288 column 2 para 3, Smith teaches that inventory has an impact on sales via a function where sales is dependent on inventory. Smith teaches that inventory only has an impact on sales when inventory exceeds a threshold. Smith's value f_0 defines this threshold. Smith teaches comparing the inventory (i.e. aggregate channel weeks of supply) and an estimate of the inventory target (i.e. aggregate channel weeks of supply target) enables inventory to be adjusted so that it's effect on sales is optimized (see also page 293 equation 26 in column 1).

Smith, Morrison and Radas all address issues related to sales forecasting, thus Smith, Morrison and Radas are all analogous art.

Art Unit: 3623

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined teachings of Morrison and Radas regarding using estimating product sales using various profile impacts, to include the step of computing a demand impact based on a comparison of estimated and targeted channel inventory, because it would provide an accurate way to estimate the impact of inventory on demand while optimizing the inventory level.

Regarding **Claim 14**, Morrison and Radas do not teach:

wherein computing the channel inventory impact measure further comprises adjusting the comparison measure based upon an estimate of channel demand sensitivity to actual inventory levels relative to target inventory levels.

Smith teaches:

wherein computing the channel inventory impact measure further comprises adjusting the comparison measure based upon an estimate of channel demand sensitivity to actual inventory levels relative to target inventory levels.

Page 293 column 1 para 3, Equation 26 adjusts the inventory comparison measure using a sensitivity factor to inventory (greek letter μ).

Art Unit: 3623

Smith teaches comparing the inventory (i.e. aggregate channel weeks of supply) and an estimate of the inventory target (i.e. aggregate channel weeks of supply target) enables inventory to be adjusted so that it's effect on sales is optimized (see also page 293 equation 26 in column 1).

Smith, Morrison and Radas all address issues related to sales forecasting, thus Smith, Morrison and Radas are all analogous art.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined teachings of Morrison and Radas regarding using estimating product sales using various profile impacts, to include the step of computing a demand impact based on a comparison of estimated and targeted channel inventory and adjusting the comparison using a sensitivity factor, because it would provide an accurate way to estimate the impact of inventory on demand while optimizing the inventory level.

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Morrison, Jeffrey; "New Product Forecasting", July 1999, PDMA Visions, pp.1-2, www.pdma.org/visions/jul99/morrison.html.

Art Unit: 3623

Morrison, Jeffrey; "New Product Forecasting: Part II What-if Analysis & Prospect Lists", October 1999, PDMA Visions, pp.1-5,
www.pdma.org/visions/Oct99/forecast.html.

Levary, Reuven R; Donchui, Han; "Choosing a technological forecasting method", Jan/Feb 1995, Industrial Management, Vol. 37, Iss. 1, p.14, 5 pgs.
ProQuest ID 4699782.

Allaway, Arthur W; "New-Product Diffusion Models", Nov 2001, JMR, Journal of Marketing Research", Vol. 38, Iss. 4, p.516, 2 pgs. ProQuest ID 89498577.

Mahajan, et.al. "New-product diffusion models", ©2000, Springer Science+Business Media, Inc., New York, pp.3-7.

Foster, John; Wild, Philip; "Econometric modeling in the presence of evolutionary change", Nov 1999, Cambridge Journal of Economics, 23, 6, ABI/INFORM Global, p.749.

Horsky, Dan; "A Diffusion Model incorporating Product benefits, price, income and information", Fall 1990, Marketing Science, 9, 4, ABI/INFORM Global, p.342.

Art Unit: 3623

Kalish, Shlomo; "A new product adoption model with price, advertising and uncertainty", Dec 1985, Management Science, 31, 12, ABI/INFORM Global, p.1569.

Golder, Peter N.; Tellis, Gerard J; "Will it ever fly? Modelling the takeoff of Really New Consumer Durables", Summer 1997, Marketing Science, 16, 3, ABI/INFORM Global, p.256.

Tam, Kar Yan; Hui, Kai Lung; "A choice model for the Selection of Computer Vendors and it's empirical estimation", Spring 2001, Journal of Management Information Systems, 17, 4, ABI/INFORM Global, p.97.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan G. Sterrett whose telephone number is 571-272-6881. The examiner can normally be reached on 8-6.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on 571-272-6729. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 3623

10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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